

Title (en)

Super-resolution optical head using optical separator.

Title (de)

Höchstauflösender optischer Kopf mit optischem Aufspalter.

Title (fr)

Tête optique à superrésolution utilisant un séparateur optique.

Publication

EP 0661698 A1 19950705 (EN)

Application

EP 94120820 A 19941228

Priority

JP 33456193 A 19931228

Abstract (en)

A super-resolution optical head device in which a first super-resolution spot having a diameter smaller than that of a diffraction limit is formed on a recording medium (7) by modulating beams emitted from a laser light source (1) includes an optical system (12,15), an optical separator (13;21;25;27;28;31,21), and a plurality of optical detectors (14,16;22a,22b). By the optical system (12,15), the laser beams reflected from the recording medium (7) are converged and a second super-resolution spot is reimaged. The optical separator is constituted by a reflection-type pinhole (13), a diffraction-type pinhole (21), a refraction-type pinhole (25), a reflection-and-absorption type pinhole (27,28), or a set of a reflection-type pinhole (31) and a reversed-type pinhole (32), which is placed at the reimaged position and optically separates the second super-resolution spot into a main beam component and a sidelobe component. The optical separator leads to the optical detectors (14,16,22a,22b) the main beam component and the sidelobe component independently from each other. The device enables to easily obtain reproduction signals with little deterioration caused by the sidelobe component. <IMAGE>

IPC 1-7

G11B 7/135; **G11B 7/13**; **G11B 7/00**; **G11B 7/12**; **G02B 27/58**

IPC 8 full level

G11B 7/004 (2006.01); **G11B 7/12** (2006.01); **G11B 7/13** (2006.01); **G11B 7/135** (2006.01); **G11B 7/1381** (2012.01)

CPC (source: EP US)

B82Y 10/00 (2013.01 - EP US); **G11B 7/004** (2013.01 - EP US); **G11B 7/12** (2013.01 - EP US); **G11B 7/13** (2013.01 - EP US); **G11B 7/1381** (2013.01 - EP US)

Citation (search report)

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- [A] US 5206852 A 19930427 - KIM YEONG-WOONG [KR], et al
- [A] PATENT ABSTRACTS OF JAPAN vol. 14, no. 337 (P - 1079) 20 July 1990 (1990-07-20)
- [DA] PATENT ABSTRACTS OF JAPAN vol. 14, no. 500 (P - 1125) 31 October 1990 (1990-10-31)
- [DA] PATENT ABSTRACTS OF JAPAN vol. 14, no. 500 (P - 1125) 31 October 1990 (1990-10-31)
- [A] PATENT ABSTRACTS OF JAPAN vol. 8, no. 68 (P - 264) 30 March 1984 (1984-03-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 13, no. 17 (P - 813) 17 January 1989 (1989-01-17)
- [A] PATENT ABSTRACTS OF JAPAN vol. 4, no. 160 (P - 035) 8 November 1980 (1980-11-08)
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